



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report for St. Hyacinth College

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

<i>PWS Name</i>	St. Hyacinth College
<i>PWS Address</i>	East State Street
<i>City/Town</i>	Granby, Massachusetts
<i>PWS ID Number</i>	1111001
<i>Local Contact</i>	Mr. John Krzeminski, Jr.
<i>Phone Number</i>	413-592-0527

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	1111001-01G	246	609	High
Well #2	1111001-02G	246	609	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water sources may be threatened by many potential contaminant sources, including septic systems, road deicing, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

Description of the Water System

St. Hyacinth College (the school) is located in the central section of Granby on School Street (State Route 202). The facility consists of several buildings located adjacent to each other. The total school student and staff population has fluctuated during the past few years as the use of the facility has changed. Presently, the facility is the temporary home of Holyoke Catholic High School and has a current population of approximately 500 people per day. The school is served by two potable supply wells: Well #1 and Well #2. The school utilizes Well #1 as the main source and Well #2 is utilized as an active backup source. Well #1 is a 350-foot deep bedrock well; Well #2 is a 40-foot

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

deep (shallow), gravel well. Well #1 is located in a vault near the main complex in front of the gymnasium and laundry. Well #2 is located in a pit in an old hay field; there is evidence of high water on the sidewalls of the pit at a level above the top of the well casing. There is no municipal wastewater sewer system in Granby; therefore, the school and surrounding facilities are served by on-site septic disposal.

Geologic mapping in the area indicates overburden deposits of approximately 50 feet in the vicinity of Well #2 and greater than 50 feet with some amount of till over bedrock in the vicinity of Well #1. The school is located in an area that is mapped as a potential, medium yield, sand and gravel aquifer. The sediments are likely sand and gravel deposited during the recession of the glaciers some 14,000 to 18,000 years ago. The bedrock in the area is mapped as intrusive rocks of the Belchertown Complex.

The Zone I is the area immediately around the well where only activities associated with supplying water or other non-threatening activities are allowed to occur. The Interim Wellhead Protection Area (IWPA) is a larger area that potentially contributes water to the well. The IWPA is only an interim protection area until an actual Zone II contribution area is delineated; the actual area of contribution to the wellhead may be larger or smaller than the IWPA. Both wells have Zone I protective radii of 246 feet and an IWPA protective radii of 609 feet. These protective radii were calculated based on the metered water use from the two highest months of use from Well #1. Please refer to the attached map that shows the Zone I and IWPA. The Zone I area for Well #1 is not conforming to current DEP requirements. The Zone I area for Well #1 includes the school, parking areas, the maintenance garage, former locations of USTs, the current fuel oil tank vault and components of septic systems; the IWPA of Well #1 includes the remainder of the school facilities, parking and the main leachfield. According to the current owners, the maintenance equipment has been removed from the garage. The Zone I for Well #2 includes only an abandoned hay field; the IWPA of Well #2 includes

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Sources of Contaminants	Zone I	IWPA	Threat	Comments
Fuel Oil Storage	No	Well #1	Moderate	Contained within a vault
Floor Drains in Boiler Rooms	No	Well #1	Moderate	Consult with UIC program regarding compliance
Agriculture/Athletic fields	No	Both	Moderate	Continue prohibiting the use of pesticides/fertilizers on school fields; use IPM.
School facilities, parking and infiltration catchbasins	Well #1	Both	Moderate	Limit road deicing usage, use BMPs for household hazardous materials and monitor parking areas and control stormwater
Low density residential housing	No	Well #2	Moderate	Septic systems, household hazardous materials, home heating fuel
Transportation Corridor	No	Well #2	Moderate	Route 202
Septic systems components	No	Both	Moderate	Residential and part of the school leachfield are in the IWPA
Hazardous materials	No	Well #1	High	Maintenance hazardous materials/laboratory waste
Transformers	No	Both	Low	Monitor transformers for potential leaks
Confirmed hazardous materials release site	Well #1	Well #1	-	Contact Bureau of Waste Site Cleanup

-For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400-foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

part of Route 202 and the leachfield. All of the underground petroleum storage tanks have been removed however, the school is a confirmed hazardous materials release site as a result of a leak from a gasoline UST that was removed some time ago; remediation at the site is on-going. In addition, the school is a registered very small quantity generator of hazardous waste.

Many water supplies were developed prior to the current DEP Zone I restrictions and are therefore, grandfathered sources. Water suppliers with non-conforming sources must notify the DEP prior to conducting any additional activities within the Zone I or expanding the systems. Water suppliers are required to frequently monitor the quality of water distributed. The water utilized at St. Hyacinth College is not treated prior to distribution. You may request additional information regarding the quality of the water, from the local contact listed in Table 1.

There is no evidence of a continuous, protective confining clay layer in the vicinity of the wells. Wells drilled in these conditions are considered highly vulnerable to potential contamination from activities on the ground surface because there is no significant hydrogeologic barrier, such as clay, to prevent surface contamination from migrating into the aquifer.

Please refer to the following section, attached maps of the Zone I and IWPA and Table 2 for additional assessment information.

2. Discussion of Land Uses in the Protection Areas

During the assessment, several land uses and activities were identified within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Non-conforming Zone I;**
2. **Fuel oil storage;**
3. **Confirmed Hazardous Materials Release Site;**
4. **Floor drains in boiler rooms;**
5. **School facilities and athletic fields;**
6. **Transportation corridors and parking; and**
7. **Hazardous materials.**

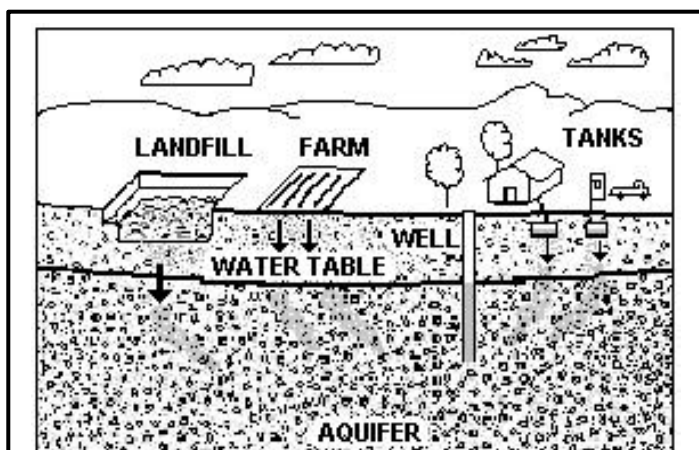


Figure 1: Example of how a well could become contaminated by different land uses and activities.

There are several activities within the Zone I and IWPA that pose a significant threat to the water supply. The overall ranking of susceptibility to contamination for the well is high based on at least one high threat activity within the protection areas. Please refer to Table 2.

1. Non-conforming Zone I – Although the water supplier owns and controls the entire Zone I area for both wells, there are non-conforming activities within the Zone I of Well #1. Many water supplies were developed prior to the promulgation of the current DEP Zone I requirements and those sources are grandfathered sources. Sources not meeting DEP Zone I requirements must receive approval from DEP and address Zone I issues prior to increasing water use or modifying systems.

Zone I Recommendations:

- ✓ Prohibit any additional activities within Zone I and, where feasible, remove non-conforming activities within the Zone I areas.
- ✓ Use Best Management Practices for handling treatment

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

For More Information:

Contact Catherine V. Skiba in DEP's Springfield Regional Office at (413) 755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/ including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier and town boards.

chemicals and vehicles used to access the area.

- ✓ Monitor all deliveries, especially petroleum products and hazardous materials and parking areas.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Consider replacement of the source if water quality becomes impacted by activities

2. Fuel oil storage – There is one fuel oil tank in a vault located within the IWPA. If managed improperly, tanks and associated fuellines can be a potential source of contamination due to leaks or spills of the materials they store.

Recommendation:

- ✓ Any modifications to the tank must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs.
- ✓ Monitor all activities associated with the fuel oil especially delivery.
- ✓ Have spill containment/absorbent materials available on-site.

3. Confirmed Hazardous Waste Release Site – The school is designated as a confirmed hazardous materials release site related to the removal of a gasoline tank years ago. As noted, remediation at the site is on-going.

Recommendations:

- ✓ Contact the Bureau of Waste Site Cleanup (413) 784-1100, regarding information about the status of this site. The site identification number is RTN # 1-0014117.

4. Floor Drains in Boiler Room and garage – There are floor drains in the boiler room, and there was a pit in the garage. The pit in the garage has been filled in and will be sealed; the drains in the boiler room discharge to a wet well from which water can be pumped into the septic system. Title 5 prohibits disposal of any wastewater other than sanitary waste to a septic system and the UIC regulations prohibit dry wells in areas where hazardous materials or petroleum may enter the floor drain. The floor drain must be protected to prevent boiler blow down, oil or other prohibited discharges through the floor drain. The facility has contacted their consultant to address this issue. The consultant has already contacted the UIC program coordinator to discuss the alternatives.

Recommendations:

- ✓ Continue persuing compliance with Department Regulations (refer to Industrial Floor Drain Brochure attached).
 - UIC coordinator for the Western Region Office of the Department (Rick Larson 413-755-2207 or Tony Zaharias 413-755-2122).
- ✓ Consider installing a tight tank.
- ✓ Oil lines from the tank to the boiler should be sleeved so that any leaks would drain back to the tank or minimal oil would leak to the boiler room. Prepare a policy and a plan for maintenance operations, especially when oil filters are changed. We recommend that you require your boiler maintenance contractor to use containment, protect the drain and have absorbent materials on hand to prevent accidental leaks while conducting routine maintenance. The contractor should be responsible for the off-site disposal of any boiler blow down generated during maintenance.
- ✓ Seal all cracks in the floor and the floor drain if it cannot be adequately protected to prevent a prohibited discharge.

5. School facilities and athletic fields – Schools generally use only household type hazardous materials. However, high school laboratory and photo labs can use potentially harmful materials and the school does not have a tight tank for the laboratory waste. There are state and federal regulations controlling some of the activities and products used at schools to promote "healthy schools". All of the school's facilities are located within the Zone I or IWPA of the well. Potential exists for contamination of the well by onsite use of fertilizers and/or pesticides. Storm drains in the parking areas at the school drain directly into the ground.

Recommendations:

- V Continue the use of Best Management Practices for all activities at the school and at the athletic fields. Consider drought resistant grasses and/or low release nutrient fertilizers in the IWPA, as required.
- V Investigate Integrated Pest Management and Best Management Practices within the IWPA as necessary.
- V Use secondary containment as necessary for any petroleum products kept for maintenance and lawn care equipment.
- V Use Best Management Practices for handling treatment chemicals and vehicles used to access the area. Do not use or store pesticides, fertilizers or deicing materials within Zone I.
- V Review the handling of laboratory wastes to determine if a tight tank is appropriate.
- V Review your emergency response plan regarding to accidental releases within the area. Ensure that emergency responders in town are aware of the locations of your resource areas.
- V Refer to the Massachusetts Public Health Associations Healthy Schools website available online at http://www.mphaweb.org/pol_schools.html for additional information.
- V Review laboratory wastes and determine if a tight tank or other management process is required. Laboratory, photo and other non-sanitary wastewater should not be disposed of through a septic system. Refer questions to Paul Nietupski at 413-755-2218 of the Springfield Office of the DEP regarding wastewater issues.

6. Transportation corridor – Route 202 is located within the IWPA along with the access and parking areas for the facility. Accidents and normal use and maintenance of roads pose a potential threat to water quality. Catch basins transport stormwater from roadways and adjacent properties to the ground, streams, rivers or reservoir. As flowing stormwater travels, it picks up de-icing materials, petroleum chemicals and other debris on roads and contaminants from streets and lawns. Common potential contaminants in stormwater originate from automotive leaks, automobile maintenance, car washing, and accidental spills, as well as waste from wildlife and pets.

Recommendations:

- V Prepare an Emergency Response Plan that includes coordination between the emergency responders to be sure they are aware of the location of your well.
- V Monitor the sodium levels in the water.

7. Hazardous Materials Storage and Use – The school utilizes hazardous materials for maintenance. Hazardous materials such as paint, thinners, petroleum products, etc. should be kept in containment and used with caution. Cleaning and disposal should not be through the septic system. Spill kits and signs designating areas of storage should be available. If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be allowed to enter a catch basin, septic system or floor drain leading directly to the ground. The school is a registered very small quantity hazardous waste generator.

Hazardous Materials Storage and Use Recommendations:

- V Review current management of hazardous materials on site and consider relocation of the well to minimize any potential threat from an accidental release at the site.
- V Use BMPs for fuel oil storage, hazardous material handling, storage, disposal, and emergency response planning.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will further reduce the water supply's susceptibility to contamination. The DEP commends the effort shown in current protection practices of not using pesticides and fertilizers in the Zone I. The school should comment to the various town boards regarding developments that may impact the school's wells.

Please review and adopt the key recommendations listed above and as follows:

Priority Recommendations:

- V Replace the wells if the sources cannot be adequately protected or if water quality is impacted.

Zone I and IWPA:

- V Prohibit any new non-water supply activities from Zone I.
- V Conduct regular inspections of the Zone I and IWPA.
- V Monitor activities and if there is evidence of increased activity or access, consider relocating the wells.
- V Post drinking water supply signs in key location such as along the access road and in the parking areas but away from the wells themselves.
- V Provide information to staff and pertinent school organizations about the potential hazards of household chemicals,

lawn care chemicals and fertilizers.

- V Use Best Management Practices (BMPs) for the use of petroleum products, lawn care products, pesticides and household hazardous waste.

Facilities Management and Education:

- V Incorporate groundwater education into school curriculum (7-12 curricula available; contact DEP for copies).
- V Staff should be instructed on the proper disposal of spent chemicals. Include custodial staff, teachers, groundskeepers, and certified operator.
- V Contact the UIC coordinator to evaluate compliance for the floor drains in the boiler room and waste disposal.

Planning:

- V Work with local officials to develop an Aquifer Protection District Bylaw that includes the IWPA's and to assist you in continued protection of the water supply.
- V Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- V Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts.
- V Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Grant Protection Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". If funds are available, the Department posts a new Request for Response (RFR), grant application form. Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" on the MA DEP website at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Areas
- Recommended Source Protection Measures Fact Sheet
- UIC/Industrial Floor Drain

APPENDIX B: REGULATED FACILITIES WITHIN THE WATER SUPPLY PROTECTION AREAS

DEP Permitted Facilities

DEP Facility Number	Facility Name	Street Address	Town	Permitted Activity	Activity Class	Facility Description
	St. Hyacinth College	School Street	Granby	Hazardous Waste Generator (Waste oil)	VSQG	Maintenance
				Air Quality	AQ	Plant

Note: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities may be located within the water supply protection area(s) that should be considered in local drinking water source protection planning.

APPENDIX C – Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at <http://www.state.ma.us/dep/bwsc>. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at <http://www.state.ma.us/dep/bwsc/sitelist.htm>, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
1-0014117	School Street	Granby	Oil

For more location information, please see the attached map. The map lists the release sites by RTN.